

S/N unknown

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Yoneda et al. Serial No.: unknown
Filed: concurrent herewith Docket No.: 8373.234US01
Title: ELECTRIC POWER STEERING APPARATUS

CERTIFICATE UNDER 37 CFR 1.10

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By: 

Name: Brant Miles

PRELIMINARY AMENDMENT

Assistant Commissioner for Patents
Washington, D. C. 20231

Dear Sir:

In connection with the above-identified application filed herewith, please enter the following preliminary amendment:

IN THE SPECIFICATIONS

Please replace the paragraph beginning at page 8, line 10, with the following rewritten paragraph:

- - FIG. 11A and 11B are schematic diagrams of a modified form of the stator windings of the electric motor according to the present invention. - -

REMARKS

The above preliminary amendment is made to clarify the descriptions of the drawings.


Applicants respectfully request that the preliminary amendment described herein be entered into the record prior to calculation of the filing fee and prior to examination and consideration of the above-identified application.

If a telephone conference would be helpful in resolving any issues concerning this communication, please contact Applicants' primary attorney-of record, Curtis B. Hamre (Reg. No. 29,165), at (612) 336-4722.

Respectfully submitted,

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an inner rotor;

FIG. 8 is an exploded perspective view illustrating the whole arrangement of the electric motor;

FIGS. 9A and 9B are schematic views respectively illustrating wiring connection of stator windings wound around salient poles shown in FIG. 6, and an equivalent circuit of the electric motor;

FIG. 10 is a graph showing a relationship between the number of poles of the stator windings and the number of poles of permanent magnets in relation steering smoothness a steering wheel; and
[FIG. 11A and 11B are schematic diagrams --
FIG. 11 is a schematic diagram] of a modified form of the stator windings of the electric motor according to the present invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

The following description is merely exemplary in nature and is in no way intended to limit the invention, its application or uses.

Referring initially to FIG. 1, an electric power steering apparatus 10 includes a steering system 23 coupled between a steering wheel 11 of a motor vehicle and front wheels 21, 21 of the motor vehicle, and a steering assist mechanism 24 designed to exert a steering assist torque to the steering system 23.

The steering system 23 includes a steering shaft 12 coupled to the steering wheel 11, first and second universal joints 13, 13, and a pinion shaft 32 which is coupled to the steering shaft 12 via the first and second universal joints 13, 13 and forms a rack-and-pinion mechanism 31. The rack-and-pinion steering mechanism 31 includes a rack shaft 34, which is connected at its